

## **APPENDIX D**



WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

588 Silver Street, Agawam, MA 01001 tel 413.789.3530 fax 413.789.2776 www.ecsconsult.com

Mr. James Morrissey  
Senior Architect  
Facilities and Campus Planning Division  
University of Massachusetts – Amherst  
360 Campus Center Way  
Amherst, MA 01003

August 14, 2009  
Project No. 01-207783.00  
Document No. 38075

RE: Limited Asbestos and Lead Paint Inspection  
Waltham Research Station  
Main Barn, Calf Barn and Garage  
University of Massachusetts

Dear Jim:

As per your request, Environmental Compliance Services, Inc. (ECS) has completed a limited inspection of building materials for the presence of asbestos-containing materials (ACMs) and lead containing paint (LCP). Materials inspected were from the proposed renovation areas as defined in WR # 06-000809.

On July 7, 2009 ECS personnel collected a total of 4 bulk samples of various suspect roofing materials for asbestos determination. These materials were deemed homogenous with other building materials located in the areas of the proposed renovations.

Laboratory test results DID INDICATE THE PRESENCE OF ASBESTOS.

The inspection sample locations and findings are detailed on the tables below. The sampling inspection forms and laboratory data sheets are enclosed with this letter.

**SUSPECT MATERIALS WITH ASBESTOS DETECTED  
WALTHAM RESEARCH STATION  
MAIN BARN, CALF BARN AND GARAGE  
UNIVERSITY OF MASSACHUSETTS**

| Functional Space (s)                   | Material Description          | Sample Number |
|--|-------------------------------|---------------|
| Waltham Research Station;<br>Calf Barn | Square transite roof shingles | WA-3          |

**SUSPECT MATERIALS WITH NO ASBESTOS DETECTED  
 WALTHAM RESEARCH STATION  
 MAIN BARN, CALF BARN AND GARAGE  
 UNIVERSITY OF MASSACHUSETTS**

| <b>Functional Space (s)</b>            | <b>Material Description</b>  | <b>Sample Number</b> |
|--|--|----------------------|
| Waltham Research Station;<br>Garage    | Roofing Material (shingles and paper barrier), from the area of large hole in the roof                         | WA-1                 |
| Waltham Research Station;<br>Main Barn | Roofing Material (shingles and paper barrier), collected from the ground underneath the large hole in the roof | WA-2                 |
| Waltham Research Station;<br>Calf Barn | Black roofing barrier found on the ground under large collapsed roof area                                      | WA-4                 |

On July 7, 2009 ECS personnel collected a total of 10 bulk sample of paint for total lead determination. These materials were also deemed homogenous with other building materials located in the area of the proposed renovation. Exact sample locations are detailed on the table below and the sampling inspection forms. The laboratory data sheets are enclosed with this letter. Laboratory test results DID INDICATE THE PRESENCE OF LEAD above method detection limits. All samples were submitted to ProScience Analytical Services an accredited laboratory for asbestos and lead determination.

**LEAD ANALYSIS RESULTS  
 WALTHAM RESEARCH STATION  
 MAIN BARN, CALF BARN AND GARAGE  
 UNIVERSITY OF MASSACHUSETTS**

| <b>Building</b>                        | <b>Description</b> | <b>Sample ID</b> | <b>Substrate and location</b>              | <b>Result (% weight)</b> |
|--|--------------------|------------------|--|--------------------------|
| Waltham Research Station;<br>Garage    | White Paint        | W-1              | Wood trim around doors and windows         | 6.84                     |
| Waltham Research Station;<br>Main Barn | White/Tan Paint    | W-2              | Large wood door frame                      | 25.79                    |
| Waltham Research Station;<br>Main Barn | Green Paint        | W-3              | Front entrance sliding door                | 10.24                    |
| Waltham Research Station;<br>Main Barn | White Paint        | W-9              | Wood trim around basement side door frames | 36.24                    |
| Waltham Research Station;<br>Main Barn | Brown Paint        | W-10             | Exterior wood siding shingles              | 0.07                     |
| Waltham Research Station;<br>Calf Barn | Green Paint        | W-4              | Wood window and door frame trim            | 23.93                    |
| Waltham Research Station;<br>Calf Barn | White Paint        | W-5              | Interior wood window frame trim            | 0.22                     |
| Waltham Research Station;<br>Calf Barn | Orange Paint       | W-6              | Entrance door                              | 0.02                     |
| Waltham Research Station;<br>Calf Barn | Brown Paint        | W-7              | Interior wood window frame trim            | 0.57                     |
| Waltham Research Station;<br>Calf Barn | White Paint        | W-8              | Exterior building walls                    | 32.15                    |

Project No. 01-207783.00 Document No. 38075  
Mr. James Morrissey  
University of Massachusetts - Amherst  
August 14, 2009

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If you have any questions pertaining to this matter, please do not hesitate to contact our office.

Sincerely,  
ENVIRONMENTAL COMPLIANCE SERVICES, INC.



Michael Grover  
*Compliance Technician*  
*Asbestos Inspector #AI000201*



Christopher L. Godfrey  
*Senior Project Manager*

MG/CLG/kab  
Attachments

# ProScience Analytical Services, Inc.

## PLM Asbestos Chain of Custody Record

LABORATORY/HEADQUARTERS  
22 Cummings Park, Woburn, MA 01801  
T: 781-935-3212 F: 781-932-4857

LABORATORY SERVICES  
683 North Mountain Rd., Newington, CT 06111  
T: 860-953-1022 F: 860-953-1030

Client: Environmental Compliance Services, ECS

Address: 588 Silver Street, Agawam, MA. 01001

Phone / FAX Number: 413-789-3530 / 413-789-2776

Project Site/Project Job Number: 01-212473.00 / U-Mass Amherst/ Waltham

Contact: Chris Godfrey / Mike Grover Work Request # 06-809

Turn Around Time Requested

☒ Same day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4-5 Days

Relinquished by/date: Michael Grover 8/2/09

Received by/date: Kathy Artore 8/2/09

Samples received: 4 Analyzed 9:30 AM

Faxed, E-mailed, Verbal by/date: US 8/10/09

Stop on first positive: Yes ☐ No ☐

Analyzed by/date: Alex BSM 8/10/09 QC by/date:

| For Lab Use | Batch # | Field ID<br>Sampled<br>date | Lab ID | Description / Location | Visual | Optical Properties | RI      | Asbestos Percentage (%) | Circle Type | Non Asbestos Percentage (%) |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|-------------|---------|-----------------------------|--------|------------------------|--------|--------------------|---------|-------------------------|-------------|-----------------------------|--------------------|---------------|-------------|--|--|------------|---------|-------------|-----------|----------------|------------|------------|--------------|-----------|------|-----------|-------|-------------|--|
|             |         |                             |        |                        | Color  | Homogeneity        | Texture | Friable                 | Morphology  | Extinction                  | Sign of Elongation | Birefringence | Pleochroism |  |  | Chrysotile | Amosite | Crocidolite | Tremolite | Anthrophyllite | Actinolite | Fiberglass | Mineral Wool | Cellulose | Hair | Synthetic | Other | Non Fibrous |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |
|             |         |                             |        |                        |        |                    |         |                         |             |                             |                    |               |             |  |  |            |         |             |           |                |            |            |              |           |      |           |       |             |  |

Sample Description Key: FUMastic=Floor tile and Mastic, Lm=Linoeum, Cm=Carpet mastic, Cvm=Covemolding mastic, Pls=Plaster skim, Plb=Plaster base,

Sh=Sheetrock, Jc=Joint Compound, Pl=Pipe insulation, Ct=Ceiling tile, Ck=Caulking, Glz=Glazing, Gdb=Glue daub

Comments:



☐ RUSH

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**ProScience Analytical Services, Inc.**  
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212  
Facsimile: 781-932-4857  
Email: [chemistry@proscience.net](mailto:chemistry@proscience.net)

## Laboratory Report

**Contact:** Chris Godfrey  
**Client:** ECS, Incorporated  
**Address:** 588 Silver Street  
Agawam, MA 01001

**Batch #:** C 256837  
**Date received:** 8/10/2009  
**Date analyzed:** 8/10/2009  
**Date of report:** 8/10/2009

**Project #** 01-207783  
**P.O.#** n/a  
**Project Site:** UMASS Watham  
WR

### Lead Analysis In Paint Using SW846-7420/3051

Results in weight percent on an "as received" wet weight basis  
All results are accurate to no more than three significant figures.

Unless otherwise indicated, all the quality control criteria for the method above have been met.

| Lab ID   | Client ID | Sample date | Description   | Result | Detection Limit | Comments |
|----------|-----------|-------------|---|--------|-----------------|----------|
| C 341029 | W-1       | 8/7/09      | White Paint On Wood Trim Around Doors & Windows, Garage | 6.84   | 0.01            |          |
| C 341030 | W-2       | 8/7/09      | White/Tan- Large Door Frame Paint, Main Barn            | 25.79  | 0.01            |          |
| C 341031 | W-3       | 8/7/09      | Green-Entrance Door Paint, Main Barn                    | 10.24  | 0.02            |          |
| C 341032 | W-4       | 8/7/09      | Green Window & Door Frame Paint, Calf Barn              | 23.93  | 0.02            |          |
| C 341033 | W-5       | 8/7/09      | White-Interior Window Frame Trim Paint, Calf Barn       | 0.22   | 0.01            |          |
| C 341034 | W-6       | 8/7/09      | Orange Entrance Door Paint, Calf Barn                   | 0.02   | 0.01            |          |
| C 341035 | W-7       | 8/7/09      | Brown-Interior Window Frame Trim Paint, Calf Barn       | 0.57   | 0.01            |          |
| C 341036 | W-8       | 8/7/09      | White-Exterior Wall Paint, Calf Barn                    | 32.15  | 0.01            |          |
| C 341037 | W-9       | 8/7/09      | White Trim Paint On Basement Door Fram Main Barn        | 36.24  | 0.01            |          |
| C 341038 | W-10      | 8/7/09      | Brown-Exterior Siding Shingles, Main Barn               | 0.07   | 0.01            |          |

BDL - Below Detection Limit

Dan Pine, Chemistry Analyst  
Stephen Chace, Chemistry Laboratory Manager  
Adrian Stanca, Laboratory Director

# ProScience Analytical Services, Inc.

## Chemistry Chain of Custody Record/Metals

LABORATORY/HEADQUARTERS CONSULTING SERVICES

22 Cummings Park, Woburn, MA 01801 683 North Mountain Rd., Newington, CT 06111  
T: 781-935-3212 F: 781-932-4857 T: 860-953-1022 F: 860-953-1030

Client: Environmental Compliance Services

Address: Street 588 Silver Street

Town Agawam State/Zip MA 01001

Project Site Line 1 Number 01-307783

Line 2 WR more Waltham

Contact: Chris Godfrey/ Mike Grover Phone 413-789-3530

FAX 413-789-2776

Air/Pager

☐ Rush < 6 Hours

Turn Around Time Requested

☒ Same Day ☐ Next Day ☐ 48 Hours ☐ 72 Hours ☐ 4-5 Days

Element

TYPE OF ANALYSIS (Column 4)

|      |       |       |
|------|-------|-------|
| AIR  | DUST  | PAINT |
| AI   | DU    | PA    |
| PM10 | SOIL  | TOF   |
| PM   | SO    | TC    |
| TSP  | WATER | WPES  |
| TS   | WA    | WI    |

☒ Pb ☐ Cd ☐ Cr ☐ As

☐ Se ☐ Ag ☐ Ba ☐ Hg

Other (please specify)

☐ QC

BATCH NUMBER

C256837

FOR LABORATORY USE ONLY

| Date Sampled | Field I.D. | Sample Description/Location                                  | TYPE OF ANALYSIS | Air Sampling Information |          |                |              | Wiped area      |               |              | ANALYSIS     |                |            | Lab I.D. |        |
|--------------|------------|--|------------------|--------------------------|----------|----------------|--------------|-----------------|---------------|--------------|--------------|----------------|------------|----------|--------|
|              |            |  |                  | Start Time               | End Time | Start Flowrate | End Flowrate | Volume (liters) | length (inch) | width (inch) | Area (sq in) | Weight (grams) | AA Reading |          | RESULT |
| 8/7/09       | W-1        | White paint on wood.<br>Trim around Doors & Windows → Garage | PA               |                          |          |                |              |                 |               |              |              |                |            | 341029   |        |
|              | W-2        | White/Tan - Large Door<br>Frame Paint → Main Barn            |                  |                          |          |                |              |                 |               |              |              |                |            |          | 30     |
|              | W-3        | Green - Entrance<br>Door Paint. → Main Barn                  |                  |                          |          |                |              |                 |               |              |              |                |            |          |        |
|              | W-4        | Green window & Door<br>Frame Trim Paint → calf barn          |                  |                          |          |                |              |                 |               |              |              |                |            | 32       |        |
|              | W-5        | White - Interior Window<br>Frame Trim Paint → calf barn      |                  |                          |          |                |              |                 |               |              |              |                |            |          | 33     |
|              | W-6        | Orange entrance Door<br>Paint. → calf barn                   |                  |                          |          |                |              |                 |               |              |              |                |            |          |        |
|              | W-7        | Brown - Interior window<br>Frame Trim Paint → calf barn      |                  |                          |          |                |              |                 |               |              |              |                |            | 35       |        |
|              | W-8        | White - Exterior<br>Wall Paint. → calf barn                  |                  |                          |          |                |              |                 |               |              |              |                |            |          | 36     |
|              | W-9        | White Trim Paint<br>on Basement Door Frames → Main Barn      |                  |                          |          |                |              |                 |               |              |              |                |            |          |        |
| 8/7/09       | W-10       | Brown exterior<br>Sliding Shingles. → main barn              | PA               |                          |          |                |              |                 |               |              |              |                |            | 38       |        |

Relinquished By:

Received By:

Comments:

Date:

Date:

5/7/09 8:00g

Time: 5:00

Time:

Date

Log-out:

Wipes provided by ProScience Analytical

ver 4.7

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